

Abstract

Waves are amplified by the gradual decrease of the depth, and when the waves reach to a vertical wall 10 of a reef 2, the breaking waves are generated by sudden decrease of the water depth. As the breaking waves rush into the upper portion of the reef 2 and pass through the slant slits 14, and wave energy are absorbed by the reef 2 and the sea water returns back to the ocean through an opening 11. The sand brought into a reef 2 with the waves are washed away by the return flow 11 so that the sand is not deposited within the reef 2 and the space in the reef 2 is always clear.

The return flow promotes generation of the breaking waves. The breaking waves are introduced into the slit, the beach erosion is prevented, and also the calm sea area utilized for the marine leisure is created. The seawater in the reef with sufficient air flows to the sea area behind the breakwater through the paths 19. The sea water containing sufficient oxygen is supplied to the bottom layer behind the breakwater without disturbing the surface so that the oxygen is supplied to the seawater behind the breakwater.